

CLAIMS

What is claimed is:

1. A method of opening an ampoule, comprising:

providing an ampoule that has a longitudinal ampoule axis, a lower liquid portion containing liquid and an upper tip portion that is narrower in diameter than the lower liquid portion, the lower liquid portion having a longitudinal outer surface, the ampoule further having a neck portion disposed between the lower liquid portion and the upper tip portion;

providing a structure that includes (a) an elongated housing having a longitudinal housing axis and an inner cavity, an open housing end, a closed housing end, sidewalls disposed between the open housing end and the closed housing end, the sidewalls having an outer housing surface and an inner housing surface forming at least a portion of the inner cavity; and (b) a lid flexibly secured to the elongated housing proximate the open housing end;

positioning the upper tip portion of the ampoule in the elongated housing such that the upper tip portion is substantially enclosed within the inner cavity of the housing, the lower liquid portion is substantially outside the housing and the longitudinal ampoule axis is substantially parallel to the longitudinal housing axis;

pressing the lid against the longitudinal outer surface of the lower liquid portion of the ampoule with a thumb or finger;

bending the elongated housing with respect to the ampoule such that the longitudinal housing axis rotates with respect to the longitudinal ampoule axis and the neck portion of the ampoule breaks;

separating the longitudinal outer surface of the lower liquid portion of the ampoule from the lid;

securing the lower liquid portion of the ampoule;

rotating the lid to cover the open housing end with at least a portion of the lid, such that the housing is substantially closed and contains the upper tip portion of the ampoule; and

disposing of the housing containing the upper tip portion of the ampoule.

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2. The method of claim 1, in which the structure additionally includes a latch for keeping the open housing end covered with at least a portion of the lid.
3. The method of claim 1, in which the lid includes an aperture, the housing includes a protrusion sized to fit into the aperture and the method further includes fitting the protrusion into the aperture to secure the lid in a closed position.
4. The method of claim 1, in which the lid is rotatably secured to the elongated housing by a plastic bendable hinge.
5. The method of claim 1, in which the outer housing surface of the elongated housing has one or more outer ridges on the outer housing surface.
6. The method of claim 1, in which the outer housing surface of the elongated housing has one or more outer ridges circumscribing the outer housing surface.
7. The method of claim 1, in which the elongated housing includes two housing portions hingedly connected to one another.
8. The method of claim 1, in which the elongated housing includes two housing portions hingedly connected to one another, and the inner housing surface forming at least a portion of the inner cavity includes at least one inner rib circumscribing at least a portion of the inner housing surface proximate the open housing end and having an inner diameter sized to receive the neck portion of the ampoule, and in which the positioning of the upper tip portion of the ampoule includes placing the neck portion of the ampoule on the inner rib and closing the two housing portions to secure the neck portion of the ampoule.
9. The method of claim 1, in which the providing of a structure that includes an elongated housing and a lid comprises providing a first elongated housing portion and a

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second elongated housing portion, the first and second elongated housing portions being hingedly connected to one another such that the first elongated housing portion is capable of being rotated toward the second housing portion to form an enclosed cavity with an open housing end and a closed housing end, the first elongated housing portion having a substantially concave first inner surface, the second elongated housing portion having a substantially concave second inner surface, the structure further including one or more ribs forming part of the first elongated housing portion or the second elongated housing portion.

10. The method of claim 1, in which the elongated housing includes a first housing portion and a second housing portion, the first and second housing portions being hingedly connected to one another, the first and second housing portions having one or more latches for securing the first and second housing portions together when in a closed position.

11. A method of opening an ampoule, comprising:

providing an ampoule that has a longitudinal ampoule axis, a lower liquid portion containing liquid and an upper tip portion that is narrower in diameter than the lower liquid portion, the lower liquid portion having a longitudinal outer surface, the ampoule further having a neck portion disposed between the lower liquid portion and the upper tip portion;

providing a structure that includes a first elongated housing portion and a second elongated housing portion, the first and second elongated housing portions being hingedly connected to one another such that the first elongated housing portion is capable of being rotated toward the second housing portion to form an enclosed cavity with an open housing end and a closed housing end, the first elongated housing portion having a substantially concave first inner surface, the second elongated housing portion having a substantially concave second inner surface, the structure further including one or more ribs forming part of the first elongated housing portion or the second elongated housing portion;

placing the upper tip portion of the ampoule against at least one of the one or more ribs;

rotating the first elongated housing portion toward the second elongated housing portion to form a housing with an enclosed cavity inside which the upper tip portion of the ampoule is substantially enclosed and is in substantial contact with at least a portion of at least one of the one or more ribs, the cavity having two ends and being closed at one end and open at the other end, the lower liquid portion of the ampoule being substantially outside the housing;

breaking the neck portion of the ampoule;

securing the lower liquid portion of the ampoule; and

disposing of the housing containing the upper tip portion of the ampoule.

12. The method of claim 11, in which the structure further includes a lid rotatably secured to the elongated housing proximate the open housing end.

13. The method of claim 11, in which the structure further includes a lid rotatably secured to the elongated housing proximate the open housing end and the method further includes pressing the lid against the longitudinal outer surface of the lower liquid portion of the ampoule with a thumb or finger and bending the elongated housing with respect to the ampoule such that the longitudinal housing axis rotates with respect to the longitudinal ampoule axis and the neck portion of the ampoule breaks.

14. The method of claim 11, in which the structure further includes a lid rotatably secured to the elongated housing proximate the open housing end and the method further includes (a) pressing the lid against the longitudinal outer surface of the lower liquid portion of the ampoule with a thumb or finger; (b) bending the elongated housing with respect to the ampoule such that the longitudinal housing axis rotates with respect to the longitudinal ampoule axis and the neck portion of the ampoule breaks; and (c) rotating the lid to cover the open housing end with a portion of the lid, such that the housing is substantially closed and contains the upper tip portion of the ampoule.

15. The method of claim 11, in which the first and second elongated housing portions are connected by one or more flexible plastic members at the ends of the first and second elongated housing portions.

16. The method of claim 11, in which the first and second elongated housing portions are connected by one or more flexible plastic strips on the sides of the first and second elongated housing portions.

17. The method of claim 11, in which the first and second housing portions further include a connector for securing the first and second housing portions in a closed position.

18. The method of claim 11, in which the structure additionally includes a lid rotatably secured to one end of the first elongated housing portion, in which the placing of the upper tip portion of the ampoule against at least one of the one or more inner ribs includes placing the structure in an open position in the palm of a hand, with the first elongated housing portion rotated away from the second elongated housing portion, with the elongated strip portion proximate the palm of the hand, laying the upper tip portion with the neck portion cradled in the inner rib, rotating the second elongated housing portion into a closed position; squeezing the second elongated housing portion toward the first elongated housing portion until the first and second elongated housing portions are securely attached to one another; rotating the structure so that the lower liquid portion is positioned directly below the upper tip portion; holding the base of the ampoule securely in one hand, gripping the structure in the other hand with a thumb on the lid, pulling the structure downward, snapping the ampoule at the neck portion, closing the lid followed by disposing of the structure containing the upper tip portion of the ampoule.

19. A method of opening an ampoule, comprising:

providing an ampoule that has a longitudinal ampoule axis, a lower liquid portion containing liquid and an upper tip portion that is narrower in diameter than the lower liquid portion, the lower liquid portion having a longitudinal outer surface, the ampoule

further having a neck portion disposed between the lower liquid portion and the upper tip portion;

providing a structure that includes: (a) a first elongated housing portion, (b) a second elongated housing portion, (c) one or more inner ribs forming part of the first elongated housing portion or the second elongated housing portion and (d) a lid flexibly secured to the first or second elongated housing portions proximate the open housing end, the first and second elongated housing portions being hingedly connected to one another such that the first elongated housing portion is capable of being rotated toward the second housing portion to form an enclosed cavity with an open housing end and a closed housing end, the first elongated housing portion having a substantially concave first inner surface, the second elongated housing portion having a substantially concave second inner surface;

placing the upper tip portion of the ampoule against at least one of the one or more inner ribs;

rotating the first elongated housing portion toward the second elongated housing portion to form a housing with an enclosed cavity inside which the upper tip portion of the ampoule is substantially enclosed and is in substantial contact with at least a portion of at least one of the one or more inner ribs, the cavity having two ends and being closed at one end and open at the other end, the lower liquid portion being substantially outside the housing and the longitudinal ampoule axis being substantially parallel to the longitudinal housing axis;

pressing the lid against the longitudinal outer surface of the lower liquid portion of the ampoule with a thumb or finger;

bending the elongated housing with respect to the ampoule such that the longitudinal housing axis rotates with respect to the longitudinal ampoule axis and the neck portion of the ampoule breaks;

separating the longitudinal outer surface of the lower liquid portion of the ampoule from the lid;

securing the lower liquid portion of the ampoule;

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rotating the lid to cover the open housing end with a portion of the lid, such that the housing is substantially closed and contains the upper tip portion of the ampoule; and

disposing of the housing containing the upper tip portion of the ampoule.